



MI FluFocus

Influenza Surveillance and Avian Influenza Update

**Bureau of Epidemiology
Bureau of Laboratories**

Michigan Department
of Community Health



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New updates in this issue:

- **Michigan:** All influenza surveillance indicators show continued decreases towards baseline activity.
 - **National:** CDC weekly surveillance indicates few influenza viruses isolated during the past week.
 - **International:** Cambodia and Indonesia report new human deaths due to H5N1 avian influenza.
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******2009 Influenza A (H1N1) virus Updates******

On April 2, MDCH updated guidance for healthcare providers, local health departments and laboratories regarding influenza surveillance, reporting and testing for the upcoming summer and fall. These documents are now available at the websites listed below.

Please continue to reference the MDCH influenza website at www.michigan.gov/flu for additional 2009 H1N1 information. Local health departments can find guidance documents in the MI-HAN document library. In addition, additional laboratory-specific information is located at the Bureau of Laboratories H1N1 page at http://www.michigan.gov/mdch/0,1607,7-132-2945_5103-213906--,00.html.

******Influenza Surveillance Reports******

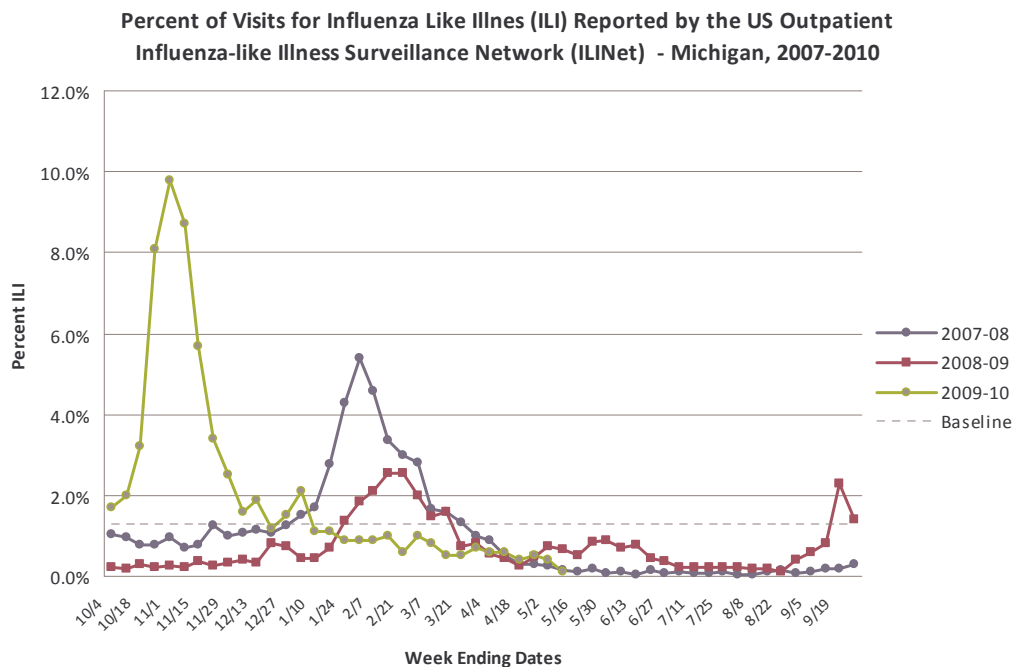
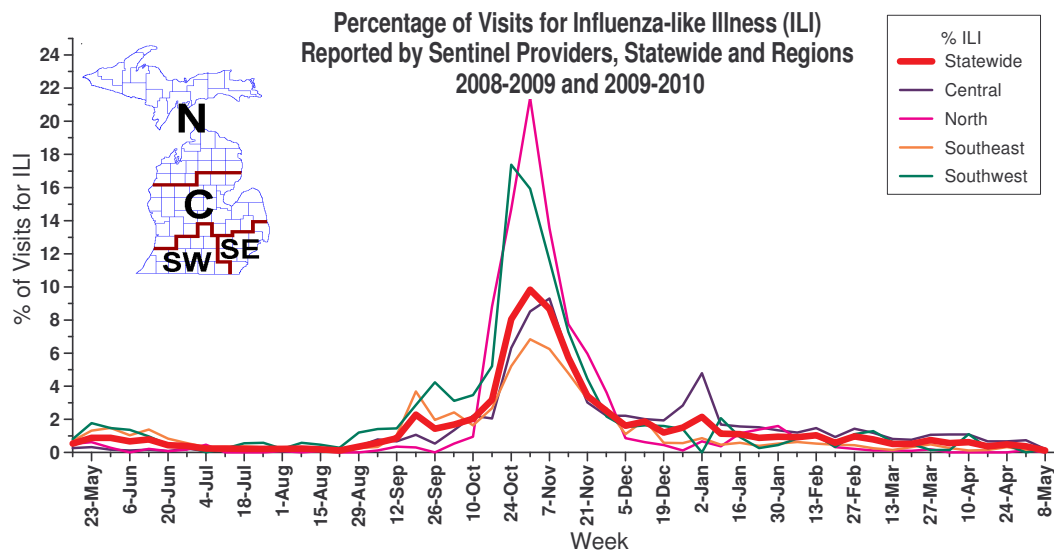
Michigan Disease Surveillance System: MDSS data for the week ending May 8th showed that aggregate influenza, individual influenza, and 2009 novel influenza reports remained steady near previous week's levels. All reported influenza types were notably lower than the levels reported at the same time last year, which is attributable to the first H1N1 pandemic wave that was being seen at this time last year.

Emergency Department Surveillance: Emergency department visits from constitutional and respiratory complaints held steady near the previous week's levels. Constitutional and respiratory complaints are slightly lower compared to the same reporting period last year. During the past week, there were three constitutional alerts in the C(2) and SE(1) Influenza Surveillance Regions, and four respiratory alerts in the C(2) and N(2) Influenza Surveillance Regions.

Over-the-Counter Product Surveillance: Over the past week, OTC product sales of chest rubs, cough/cold aides, pediatric electrolytes, and thermometers held steady compared with the previous week's levels. All indicators are consistent with levels seen this time last year except for chest rub sales, which are slightly higher.

Sentinel Provider Surveillance (as of May 13): During the week ending May 8, 2010, the proportion of visits due to influenza-like illness (ILI) decreased to very low levels at 0.1% overall. Nine patient visits due to ILI were reported out of 7,246 office visits. Twenty-six sentinel sites provided data for this report. Activity increased in one surveillance region: Southwest (0.2%); decreased in two surveillance regions: Central (0.2%) and North (0.0%); and remained the same in the Southeast surveillance region (0.1%). Please note that these rates may change as additional reports are received.

As part of pandemic influenza surveillance, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.



Laboratory Surveillance (as of May 8): During May 2-8, MDCH Bureau of Laboratories identified no influenza isolates. For the 2009-2010 season (starting on October 4, 2009), MDCH BOL has identified 610 influenza isolates:

- 2009 Influenza A (H1N1): 609
- Influenza B: 1

Ten sentinel laboratories reported for the week ending May 8, 2010. One lab reported sporadic influenza A positives (SE); all others reported no influenza A positives. No labs reported any influenza B positives. Three labs reported sporadic RSV positives (SE, C).

Michigan Influenza Antigenic Characterization (as of May 13): One 2009 H1N1 influenza A virus from Michigan has undergone further characterization at the CDC. This virus was characterized as A/California/07/2009 (H1N1)-like, which is the recommended strain for the H1 component of the 2010-11 Northern Hemisphere vaccine.

Michigan Influenza Antiviral Resistance Data (as of May 13): Results are currently not available for antiviral resistance at CDC for the 2009-2010 season.

Antiviral resistance testing takes months to complete and cannot be used to guide individual patient treatment. However, CDC has made recommendations regarding the use of antivirals for treatment and prophylaxis of influenza. The guidance is available at <http://www.cdc.gov/H1N1flu/recommendations.htm>.

Influenza-Associated Pediatric Mortality (as of May 13): Five 2009 H1N1 influenza-associated pediatric mortalities (SE(3), SW, N) have been reported to MDCH for the 2009-2010 influenza season.

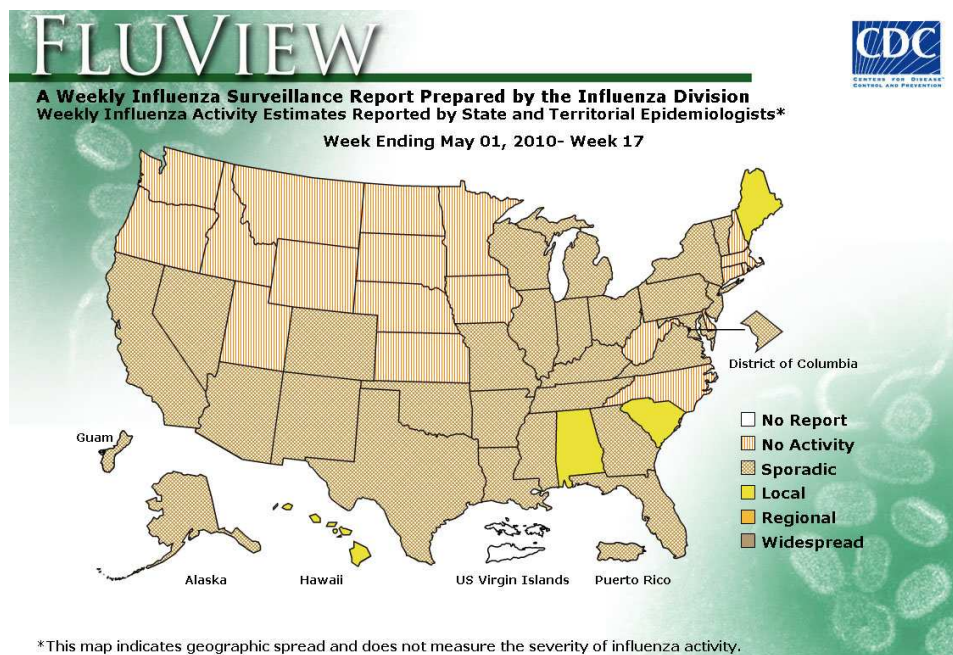
***CDC has asked states for information on any pediatric death associated with influenza. This includes not only any pediatric death (<18 years) resulting from a compatible illness with laboratory confirmation of influenza, but also any unexplained pediatric death with evidence of an infectious process. Please immediately call MDCH to ensure proper specimens are obtained. View the complete MDCH protocol online at http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Influenza Congregate Settings Outbreaks (as of May 13): Seven congregate setting outbreaks with confirmatory novel influenza A H1N1 testing (2SE, 3 SW, 1C, 1N), and three outbreaks associated with positive influenza A tests (2C, 1N) have been reported to MDCH for the 2009-2010 influenza season. These are 8 school facilities and 2 long term care facilities. Human metapneumovirus was confirmed in one outbreak in a long term care facility (SW) in February.

During fall 2009, 567 influenza-related school and/or district closures in Michigan (Public Health Preparedness Region 1 - 55, Region 2N - 4, Region 2S - 8, Region 3 - 54, Region 5 - 153, Region 6 - 100, Region 7 - 109, Region 8 - 84) were reported.

National (CDC [edited], May 7): During week 17 (April 24 - May 1, 2010), influenza activity decreased in the U.S. 16 (0.9%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. All eight subtyped influenza A viruses were 2009 influenza A (H1N1). The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. One influenza-associated pediatric death was reported and was associated with 2009 influenza A (H1N1) virus infection. The proportion of outpatient visits for influenza-like illness (ILI) was 0.7%, which is below the national baseline of 2.3%. All 10 regions reported ILI below region-specific baseline levels. No states reported widespread or regional influenza activity. Four states reported local influenza activity. The District of Columbia, Guam, Puerto Rico, and 27 states reported sporadic influenza activity. Nineteen states reported no influenza activity, and the U.S. Virgin Islands did not report.

	Week 17
No. of specimens tested	1,770
No. of positive specimens (%)	16 (0.9%)
Positive specimens by type/subtype	
Influenza A	11 (68.8%)
A (2009 H1N1)	8 (72.7%)
A (subtyping not performed)	3 (27.3%)
A (unable to subtype)	0 (0.0%)
A (H3)	0 (0.0%)
A (H1)	0 (0.0%)
Influenza B	5 (31.3%)



To access the entire CDC weekly surveillance report, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>

International (WHO, May 7): PANDEMIC (H1N1) 2009: During weeks 13-14, pandemic influenza A (H1N1) 2009 virus activity in general was low.

Widespread outbreaks of pandemic influenza A (H1N1) 2009 were reported by India and Jamaica. Regional outbreaks were reported in Barbados, Bolivia, Colombia, Cuba, Ecuador, Nicaragua, Peru and Venezuela. Local levels of activity were reported in Chile, Singapore and United States of America.

Sporadic pandemic influenza A (H1N1) 2009 activity was reported in Bangladesh, Belarus, Brazil, Cameroon, Canada, China, China Hong Kong Special Administrative Region, Democratic Republic of the Congo, Denmark, France, Germany, Ghana, Greece, Hungary, Indonesia, Japan, Kenya, Madagascar, Mexico, Republic of Korea, Romania, Russian Federation, Rwanda, Singapore, Slovakia, Spain, Sri Lanka, Thailand, United Kingdom and Zambia.

SEASONAL INFLUENZA: Influenza B was the predominant virus in a number of countries including China, China Hong Kong Special Administrative Region, Iran (Islamic Republic of), Italy, Mongolia, the Republic of Korea, Russian Federation and Sweden.

Sporadic seasonal influenza activity was observed in Angola (H3,B), Bangladesh (B), Belarus (B), Belgium (B), Brazil (B), Cameroon (B), Canada (B), China (H1,H3), China Hong Kong Special Administrative Region (H3,B), Democratic Republic of Congo (H3,B), Estonia (B), Ghana (H3), India (B), Indonesia (H3,B), Japan (H3,B), Kenya (H3,B), Kazakhstan (B), Latvia (B), Norway (B), Poland (B), Russian Federation (H1,H3,B), Rwanda (H3,B), South Africa (B), Singapore (H3,B), Spain (B), Thailand (H3,B), Turkey (B), United Kingdom (B), United Republic of Tanzania (B) and United States (H3,B).

Afghanistan, Algeria, Armenia, Australia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Cambodia, Croatia, Dominica, Egypt, El Salvador, Ethiopia, France-New Caledonia, Georgia, Guinea, Kyrgyzstan, Lithuania, Luxembourg, Mozambique, Netherlands, New Zealand, Nigeria, Pakistan, Panama, Portugal, Republic of Moldova, Senegal, Serbia, Slovenia, The former Yugoslav Republic of Macedonia, Tunisia, Uganda, Ukraine and Uzbekistan reported no influenza activity.

MDCH reported **SPORADIC INFLUENZA ACTIVITY** to the CDC for the week ending May 8, 2010.

For those interested in additional influenza vaccination and education information, the MDCH *FluBytes* is available at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html.

Novel Influenza Activity and Other News

WHO Pandemic Phase: Phase 6 – characterized by increased and sustained transmission in the general population. Human to human transmission of an animal or human-animal influenza reassortant virus has caused sustained community level outbreaks in at least two WHO regions.

National, Research (American Academy of Pediatrics, May 4): Children hospitalized with pandemic H1N1 influenza in 2009 were older and more likely to have underlying medical conditions than children hospitalized with seasonal influenza during prior flu seasons, according to a study to be presented Tuesday, May 4 at the Pediatric Academic Societies (PAS) annual meeting in Vancouver, British Columbia, Canada.

Population-based surveillance of 5.3 million children for laboratory-confirmed influenza was conducted in 10 states during the 2003-2009 influenza seasons and in the early 2009 H1N1 pandemic. Investigators used the data to compare the demographics, medical history and clinical course of children younger than 18 years who were hospitalized with seasonal influenza vs. those hospitalized with H1N1 flu.

Results showed the median age of children hospitalized with H1N1 influenza was 5 years, compared to 1 year for those hospitalized with seasonal flu in 2003-2009. In addition, children with asthma, hemoglobinopathies such as sickle-cell disease and a history of prematurity made up a larger proportion of all children hospitalized with H1N1 influenza than with seasonal flu. However, one-third of children hospitalized with H1N1 influenza were previously healthy.

"Our findings underscore the importance of influenza immunization in children of all ages and particularly

in children with underlying medical conditions," said lead author Fatimah S. Dawood, MD, epidemic intelligence service officer, Influenza Division, Centers for Disease Control and Prevention (CDC). "Ensuring immunization of children at risk for hospitalization with influenza will remain critical during the upcoming 2010-2011 influenza season when the 2009 pandemic H1N1 virus may continue to circulate and other seasonal influenza viruses may circulate as well."

The 2010-2011 seasonal flu vaccine will protect against three flu viruses, one of which is a 2009 H1N1-like flu virus.

Results also showed that compared to children hospitalized with seasonal influenza, an even higher proportion of children hospitalized with H1N1 influenza were diagnosed with pneumonia and/or required intensive care.

"These findings also support the use of early antiviral treatment in children with 2009 pandemic H1N1 influenza who require hospitalization," Dr. Dawood said. "Prior studies of seasonal influenza have demonstrated that antiviral treatment may improve outcomes in patients with severe influenza."

International, Human (WHO, May 4): The Ministry of Health of Cambodia has announced a new confirmed case of human infection with the H5N1 avian influenza virus.

The 27-year-old male, from Prey Veng Province, developed symptoms on 13 April 2010, was admitted to the hospital on 16 April and died the following day. The presence of the H5N1 virus was confirmed by the National Influenza Centre, the Institute Pasteur in Cambodia. The patient prepared and consumed sick poultry in the 7 days before onset of symptoms.

To date, Cambodia has reported 10 laboratory confirmed cases with 8 deaths since 2005.

International, Human (WHO, May 6): The Ministry of Health of Indonesia has announced two new confirmed cases of human infection with the H5N1 avian influenza virus. A 45-year-old female from the city of Malang in East Java province developed symptoms on 22 February. She recovered and is in a healthy condition. The case disposed of dead chickens in the 4 days before onset of symptoms.

The second case, a 4-year-old female from the city of Pekanbaru in Riau province developed symptoms on 19 April, was hospitalized on 22 April but died on 28 April. Investigations into the source of infection are ongoing.

Laboratory tests on both cases confirmed infection with the H5N1 avian influenza virus.

Of the 165 cases confirmed to date in Indonesia, 136 have been fatal.

International, Poultry (OIE [edited], April 25): Highly pathogenic avian influenza H5N1; Bangladesh
Report type: Follow-up report No. 24

Start date: 05 Feb 2007; Date of 1st confirmation of the event: 22 Mar 2007

Report date: 25 Apr 2010; Date submitted to OIE: 25 Apr 2010

Summary of outbreaks: Total outbreaks: 12

Species: Birds; Susceptible: 141726; Cases: 10605; Deaths: 10605; Destroyed: 131121; Slaughtered: 0

Epidemiology - Source of the outbreak(s) or origin of infection: Unknown or inconclusive

Future Reporting: The event is continuing. Weekly follow-up reports will be submitted.

International, Wild Birds (OIE [edited], May 7): Highly pathogenic avian influenza H5N1; Israel

Start date: 29 Apr 2010; Date of 1st confirmation of the event: 6 May 2010

Report date: 6 May 2010; Date submitted to OIE: 7 May 2010

Total outbreaks: 1

Location: Hadarom (Ein Gedi, Dead Sea)

Species: Birds; Susceptible: 115; Cases: 2; Deaths: 2; Destroyed: 113; Slaughtered: 0

Epidemiology: Source of the outbreak(s) or origin of infection: unknown or inconclusive.

Epidemiological comments: no birds have been introduced in the mini-zoo since several months.

Control measures applied: stamping out, quarantine, movement control inside the country, screening, zoning; vaccination prohibited

Measures to be applied: disinfection of infected premises/establishment(s), dipping/spraying

International, Wild Birds (OIE [edited], May 10): Highly pathogenic avian influenza H5; Mongolia

Date of first confirmation of the event: 08/05/2010; Date of Start of Event: 03/05/2010
Date of report: 10/05/2010; Date Submitted To OIE: 10/05/2010
Province: SUKHBAATAR; District: Dariganga soum; Location: Ganga Lake
Species: Wild species; Cases: 26; Deaths: 26; Destroyed: 0; Slaughtered: 0
Affected Population: Whooper swans (*Cygnus cygnus*) and greylag geese (*Anser anser*)
Epidemiological comments: Source of the outbreak(s) or origin of infection: Unknown or inconclusive
Control Measures Applied: Quarantine, Screening, Zoning
To be applied: No Planned Control Measures; Animals treated: No

Michigan Wild Bird Surveillance (USDA, as of May 13): For the 2009 testing season (April 1, 2009-March 31, 2010), HPAI subtype H5N1 has not been recovered from any of the 111 Michigan samples tested to date, including 58 live wild birds, 39 hunter-killed birds and 14 morbidity/mortality specimens. H5N1 HPAI has not been recovered from 19,776 samples tested nationwide. The current number of samples tested for the 2010 testing season is 37. For more information, visit the National HPAI Early Detection Data System at <http://wildlifedisease.nbii.gov/ai/>.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at <http://www.michigan.gov/emergingdiseases>.

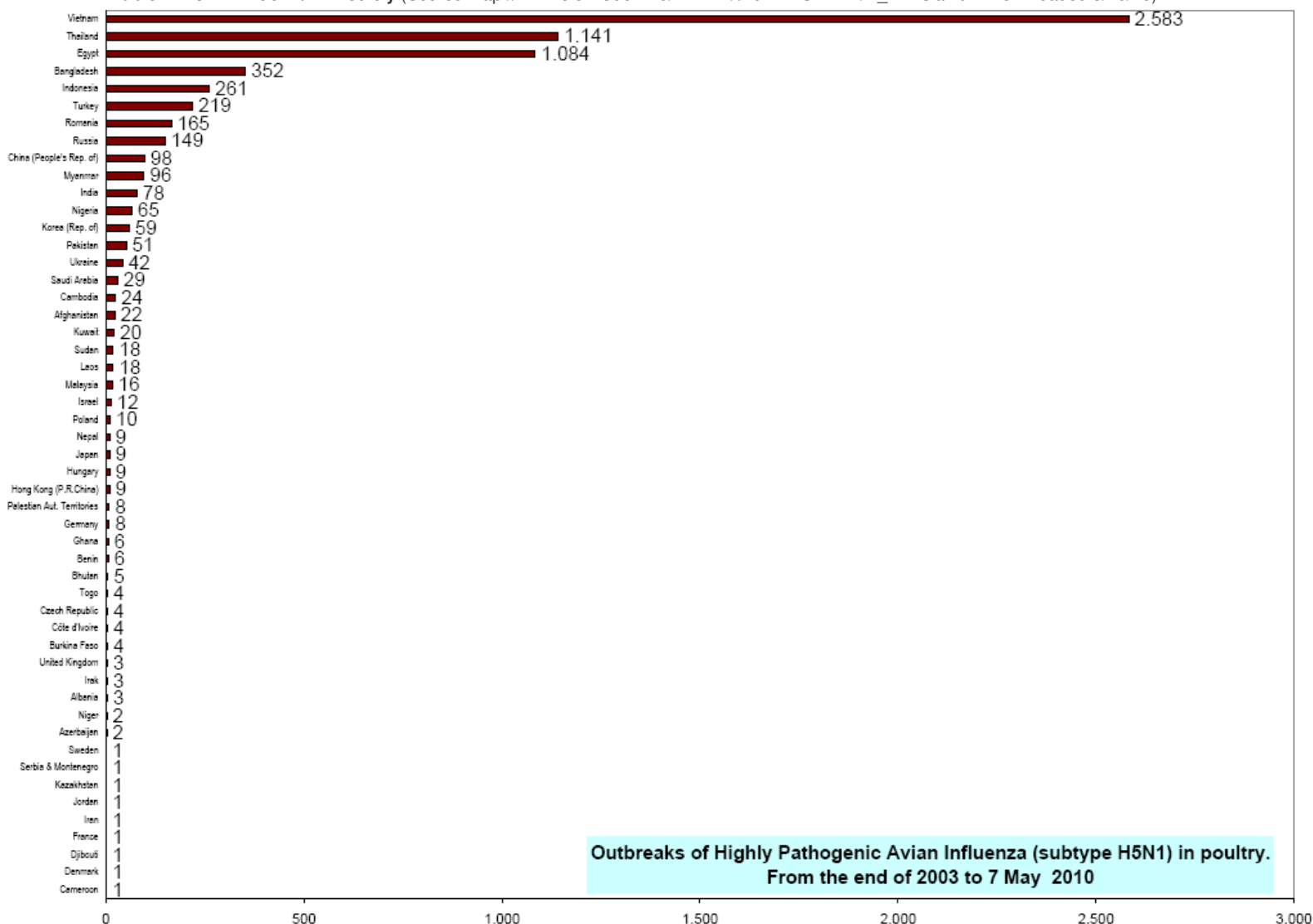
Please contact Susan Peters at PetersS1@Michigan.gov with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

Contributors

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Table 1. H5N1 Influenza in Poultry (Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 5/10/10)



**Outbreaks of Highly Pathogenic Avian Influenza (subtype H5N1) in poultry.
From the end of 2003 to 7 May 2010**

Table 2. H5N1 Influenza in Humans - Cases up to May 6, 2010. http://www.who.int/csr/disease/avian_influenza/country/cases_table_2010_05_06/en/index.html. Downloaded 5/10/2010. Cumulative number of lab-confirmed cases reported to WHO. Total cases includes deaths.

Country	2003		2004		2005		2006		2007		2008		2009		2010		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	10	8
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	0	0	38	25
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	19	7	109	34
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	3	2	165	136
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	119	59
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	30	12	498	294